

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) ~~An n-channel~~ A semiconductor device including each of n-channel and p-channel devices on a common substrate, the semiconductor device comprising:

each of the n-channel and p-channel devices including a semiconductor substrate on which a silicon germanium film, a carbon-containing silicon film and a silicon film are formed in this order, and

a gate electrode on the semiconductor substrate with intervention of a gate oxide film,

wherein a channel region of the n-channel device is different than a channel region of the p-channel device in that the channel region of the n-channel device of the semiconductor device is formed mainly in the carbon-containing silicon film, and the channel region of the p-channel device is formed mainly in the silicon germanium film.

2. (Currently amended) A p-channel semiconductor device comprising:

a semiconductor substrate on which a silicon germanium film, a carbon-containing silicon film and a silicon film are formed in this order, and

a gate electrode on the semiconductor substrate with intervention of a gate oxide film,

wherein a channel region of the p-channel semiconductor device is formed in the silicon germanium film.

3. (Original) A semiconductor device according to claim 1 or 2, wherein the silicon germanium film contains 10 atom% to 40 atom% of germanium and has a thickness of 5 nm to 50 nm.

4. (Original) A semiconductor device according to claim 1 or 2, wherein the carbon-containing silicon film contains 0.1 atom% to 1 atom% of carbon and has a thickness of 5 nm to 50 nm.

5. (Original) A semiconductor device according to claim 1 or 2, wherein the semiconductor substrate is a single crystal silicon substrate.

6. (Original) A semiconductor device according to claim 1 or 2, wherein the semiconductor substrate is an SOI substrate.

7. (Canceled)

8. (New) The semiconductor device of claim 1, wherein the carbon-containing silicon film consists essentially of silicon and carbon.

9. (New) The semiconductor device of claim 2, wherein the carbon-containing silicon film consists essentially of silicon and carbon.

10. (New) The semiconductor device of claim 1, wherein the silicon germanium film consists essentially of silicon and germanium.

11. (New) The semiconductor device of claim 2, wherein the silicon germanium film consists essentially of silicon and germanium.

12. (New) The semiconductor device of claim 1, wherein the p-channel device comprises a pMOS transistor, and the n-channel device comprises an nMOS transistor.

13. (New) The semiconductor device of claim 1, wherein the silicon germanium film is located directly on and contacting the semiconductor substrate.

14. (New) An n-channel semiconductor device comprising:

a semiconductor substrate on which (a) a film consisting essentially of silicon and germanium, (b) a film consisting essentially of carbon and silicon, and (c) a film consisting essentially of silicon are formed in this order,

a gate electrode on the semiconductor substrate, and

wherein a channel region of the n-channel semiconductor device is mainly in the film consisting essentially of carbon and silicon.

15. (New) The semiconductor device of claim 1, wherein a lattice constant of the carbon-containing silicon film is less than respective lattice constants of the silicon germanium film and the silicon film, and wherein the lattice constant of the silicon film is less than the lattice constant of the silicon germanium film.

16. (New) The semiconductor device of claim 2, wherein a lattice constant of the carbon-containing silicon film is less than respective lattice constants of the silicon germanium film and the silicon film, and wherein the lattice constant of the silicon film is less than the lattice constant of the silicon germanium film.

17. (New) An n-channel semiconductor device comprising:
a semiconductor substrate on which a silicon germanium film, a carbon-containing silicon film and a silicon film are formed in this order,
a gate electrode on the semiconductor substrate,

wherein a channel region of the n-channel semiconductor device is mainly formed in the carbon-containing silicon film, and

wherein a lattice constant of the carbon-containing silicon film is less than respective lattice constants of the silicon germanium film and the silicon film, and wherein the lattice constant of the silicon film is less than the lattice constant of the silicon germanium film.